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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA-08325 (March 2003)
NASA
Superseding NASA-08325 (March 2002)

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NATIONAL AERONAUTICS **NASA**
AND SPACE ADMINISTRATION **Superseding NASA-08325 (March 2002)**

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SECTION 08325

SECURITY DOORS
03/03

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NOTE: Delete, revise, or add to the text in this section to cover project requirements. Notes are for designer information and will not appear in the final project specification.

This section covers metal clad and corrugated steel fire protective doors, labeled fire door frames, and fire door hardware.

Drawings must indicate the locations of doors, opening dimensions, headroom and conditions, type of door operation, and fire rating requirements. Vertical sliding doors are not included in this specification.

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PART 1 GENERAL

1.1 REFERENCES

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NOTE: The following references should not be manually edited except to add new references. References not used in the text will automatically be deleted from this section of the project specification.

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The publications listed below form a part of this section to the extent referenced:

ASTM INTERNATIONAL (ASTM)

ASTM A 123/A 123M	(2002) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153/A 153M	(2001a) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 36/A 36M	(2001) Standard Specification for Carbon Structural Steel
ASTM A 525	(1993) Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
ASTM A 525M	(1991; Rev A) Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process (Metric)
ASTM A 526/A 526M	(1990) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality
ASTM A 527/A 527M	(1990) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality
ASTM A 780	(1993) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM E 152	(1981; Rev A) Standard Methods of Fire Tests of Door Assemblies

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 252	(1990) Standard Methods of Fire Tests of Door Assemblies
NFPA 80	(1992) Standard for Fire Doors and Fire Windows

UNDERWRITERS LABORATORIES (UL)

UL 10A	(1993; 19th Ed) UL Standard for Safety Tin-Clad Fire Doors

1.2 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01330 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.

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The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification:

SD-02 Shop Drawings

Fabrication drawings for the following items shall indicate dimensions, gage thickness of metal facing and door finish, and type and location of hardware and accessories.

Metal Clad Fire Doors
Corrugated Sheet Metal Doors

SD-02 Shop Drawings

Installation drawings for the following items shall include fire rating, location, opening dimensions and wall thickness, fusible links and linkage, frame construction and method of installation.

Metal Clad Fire Doors
Corrugated Sheet Metal Doors
Vision Panel
Frames
Hardware
Counterweight Boxes
Locking Devices
Interconnecting Devices

SD-03 Product Data

Manufacturer's catalog data shall be submitted for the following items:

Metal Clad Fire Doors
Corrugated Sheet Metal Doors
Vision Panel
Frames
Hardware
Counterweight Boxes
Locking Devices
Interconnecting Devices

SD-07 Certificates

Certificates shall be submitted for the following items, certifying inspection from the UL if doors and frames exceed the size for which testing and labeling service is offered. Certificates shall state that the doors, frames, and hardware to be provided are, except for size, identical in design, materials, and construction to a door that has been tested and rated.

Metal Clad Fire Doors
Corrugated Sheet Metal Doors
Frames

Hardware

1.3 FIELD MEASUREMENTS

Field measurements shall be taken prior to the preparation of fabrication and/or installation drawings.

1.4 DELIVERY, HANDLING, AND STORAGE

Doors, frames, and hardware shall be protected from damage at all times.

Doors, frames, and hardware shall be stored in a dry, weatherproof, properly ventilated area in accordance with the manufacturer's printed directions.

1.5 WARRANTY

Contractor shall warrant that upon notification by the Government, he will immediately remove and replace defective doors with new doors, properly finished, at no additional cost to the Government within the warranty period.

1.6 PERFORMANCE REQUIREMENTS

Doors, frames, and hardware shall be the types that have been fire tested, rated, and labeled in accordance with ASTM E 152, and shall bear a metal UL label. Labels shall indicate the rating in hours duration of exposure to fire, with a letter following the hourly rating to designate the location for which the assembly is designed and the temperature rise on the unexposed face of the door at the end of 30 minutes of fire exposure, when installed in accordance with NFPA 80.

Fire doors shall be labeled showing the name of the manufacturer, the name of the third party inspection agency, the fire protection rating and, where required for fire doors in exit enclosures, the maximum transmitted temperature end point.

Doors and frames shall bear the UL label: Listed Fire Door/Frame. Special frames constructed of materials other than steel and intended for use with doors rated at less than 3 hours shall bear a UL label indicating the hourly rating.

Metal UL labels shall be attached to each item of sliding and swinging hardware in accordance with the requirements specified in the UL.

PART 2 PRODUCTS

2.1 DOOR OPERATION

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NOTE: Drawings must indicate location, type of operation, headroom, side wall requirements, dimensions, and fire rating.
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Door operation shall be as indicated on the project drawings.

2.2 METAL CLAD FIRE DOORS

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NOTE: Delete the paragraph heading and the following paragraphs if corrugated sheetmetal fire doors are selected.
****

Doors shall be the fire rating, dimensions, and operating types indicated, complete with hardware, and constructed in accordance with UL 10A and as specified.

[Doors shall be Class A, 3-hour, temperature rise 30 minutes, 250 degrees F 121 degrees C maximum, 3-ply core construction.]

[Doors shall be Class B, 1-1/2 hour, temperature rise 30 minutes, 250 degrees F 121 degrees C maximum, 2-ply core construction.]

Cores shall be kiln-dried, select white pine or other nonresinous soft wood, tongue and grooved, surfaced four sides; laminated construction; number of plies as required by the class of opening to be protected. Two-ply cores shall be laid with boards of one ply at right angles to the boards of the other ply. Three-ply cores shall have boards in the center ply running horizontally and the two outer plies running vertically. Plies shall be secured with nails spaced at not more than 8 inches 200 millimeter on center each way, driven flush, and clinched.

Coverings shall be [14-] [16-] [18-] gage [1.9] [1.6] [1.3] millimeter steel sheets conforming to ASTM A 527/A 527M, G90. Z275.

Covering installation shall be double-lock-joint construction with 1/2-inch 13 millimeter wide seams; nailed under seams with galvanized nails 4 inches 100 millimeter on center; free of waves, bulges, kinks, and irregular surfaces; corners mitered with clinch locks and tight joints.

Vents shall be concealed or on unexposed surfaces; size and location shall conform to NFPA 80.

2.3 CORRUGATED SHEET METAL DOORS

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NOTE: Delete the paragraph heading and the following paragraphs if metal clad fire doors are selected.

The corrugated type of sheet metal door should be considered where the door will be subject to rough usage and to conditions which might induce decay in the tin clad door.
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Doors shall be the dimension, fire rating, and operating types indicated, complete with hardware.

****
NOTE: Select the required fire rating.
****

[Doors shall be Class A, 3-hour temperature rise in excess of 650 degrees F 343 degrees C in 30 minutes.]

[Doors shall be Class B, 1-1/2-hour temperature rise in excess of 650 degrees F 343 degrees C in 30 minutes.]

Metal coverings shall be galvanized steel sheet, 2.67 pitch by 9/16-inch 14 millimeter depth, 0.0299-inch 0.759 millimeteruncoated thickness. Sheets shall conform to ASTM A 123/A 123M, Type II, Class D, galvanized in conformance with ASTM A 525, G90. ASTM A 525M, Z275.

Covering shall be installed with corrugations on exposed faces vertical, with edges formed around the inside of the angle frame. Corrugations on unexposed faces shall be horizontal. Sheets shall be fastened to frames and to each other with galvanized tinner's rivets and bolts, with provision for expansion.

Frames shall be steel shapes conforming to ASTM A 36/A 36M, galvanized in conformance with ASTM A 525, G90; ASTM A 525M, Z275;jamb and head members 2-1/2 by 2-1/2 by 1/4 inch 65 by 65 by 8 millimeter angles; sill member, T-section. Joints and connections shall be welded and ground smooth.

2.4 VISION PANEL

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NOTE: Delete the paragraph heading and the following paragraphs if vision panels are not required.
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Frames shall be fabricated to the size indicated from 1/8-inch 3 millimeter thick galvanized steel formed to a channel profile with 2-inch 50 millimeter flanges by the door thickness, through-bolted to the door with galvanized hexagonal pan-head bolts.

Glass stops shall be as detailed, removable one side.

Glass panels in fire rated doors shall conform to the test requirements of NFPA 252.

Glass shall be as specified in Section 08810 GLASS.

2.5 FRAMES FOR FLUSH-MOUNTED DOORS

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NOTE: Delete the paragraph heading and the following paragraphs if flush-mounted swinging doors

are not required.

Drawings must indicate opening dimension, thickness of wall, channel size, jamb, and sill conditions.

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Frames shall be UL listed and labeled steel channel frames, size as indicated, hot-dip galvanized in accordance with ASTM A 525, G90, ASTM A 525M, Z275, after fabrication, furnished as part of the door assembly by the door manufacturer. Steel shall conform to ASTM A 36/A 36M. Frames shall be plumb and straight, with all joints continuous welded and ground smooth. A continuous steel bar stop, 3/4-inch 20 millimeter square, shall be welded to the frame. Hinge pintles and latch keepers shall be welded to the jambs in the factory. Holes for other hardware items shall be drilled and tapped in the factory.

Sills shall be 1/4-inch 8 millimeter thick galvanized steel plate with a nonskid checkered pattern or a recessed galvanized steel pan, 0.1046 inch 2.66 millimeter thick and at least 1-1/2 inches 38 millimeter deep.

2.6 HARDWARE

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NOTE: Select one of the following two paragraphs depending on whether or not galvanized hardware is required.

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[Hardware for fire doors shall be manufacturer's standard factory prime painted steel and iron hardware, UL labeled, surface applied, as furnished by the door manufacturer in a complete set for the particular type of door operation. Hardware sets shall include fittings and fasteners required for fastening hardware to door and for hanging, sliding, or hinged operation, including fusible links and automatic closing devices. Each item of door hardware shall bear a UL label.]

[Hardware for fire doors shall be the manufacturer's steel and iron hardware, UL labeled, hot-dip galvanized, surface applied, as furnished by the door manufacturer in a complete set for the particular type of door operation. Hardware sets shall include fittings and fasteners required for fastening hardware to door and for hanging, sliding, or hinged operation, including fusible links and automatic closing devices. Weight of zinc coating shall conform to the requirements of ASTM A 153/A 153M, Table 1. Each item of door hardware shall bear a UL label.]

2.7 OPTIONAL EQUIPMENT

[Counterweight Boxes shall be sized as required for counterweight and clearance and shall be fabricated from 0.0747-inch 1.897 millimeter thick steel sheets conforming to ASTM A 526/A 526M, G90 Z275.]

[Locking Devices shall be the door manufacturer's standard hasp and staple. The Government will provide the required padlock.]

[Interconnecting Devices shall be the door manufacturer's standard for connecting fusible links for doors on both sides of a wall.]

PART 3 EXECUTION

3.1 INSTALLATION

Doors shall be installed in accordance with the manufacturer's standard procedure and NFPA 80 for the fire rating and type of door operation indicated.

Doors, frames, and hardware shall be installed to the operating tolerances required. Frames shall be built in as the masonry work progresses, if applicable.

Holes drilled in masonry for installation of track, hardware, and fittings shall be sharp and clean with no broken areas or spalls. Damaged work shall be removed and replaced.

Abrasions, tool marks, and damages to the finish coatings of walls and to the fire door and hardware shall be repaired with a compatible material.

3.2 PAINTING

Painting of doors and frames is specified in Section 09920 ARCHITECTURAL PAINTING. Painted walls and prime painted finish door hardware shall be cleaned, wire brushed, and touched up with the paint originally used. Galvanized finish fire doors and hardware shall be repaired with paint conforming to ASTM A 780.

-- End of Section --